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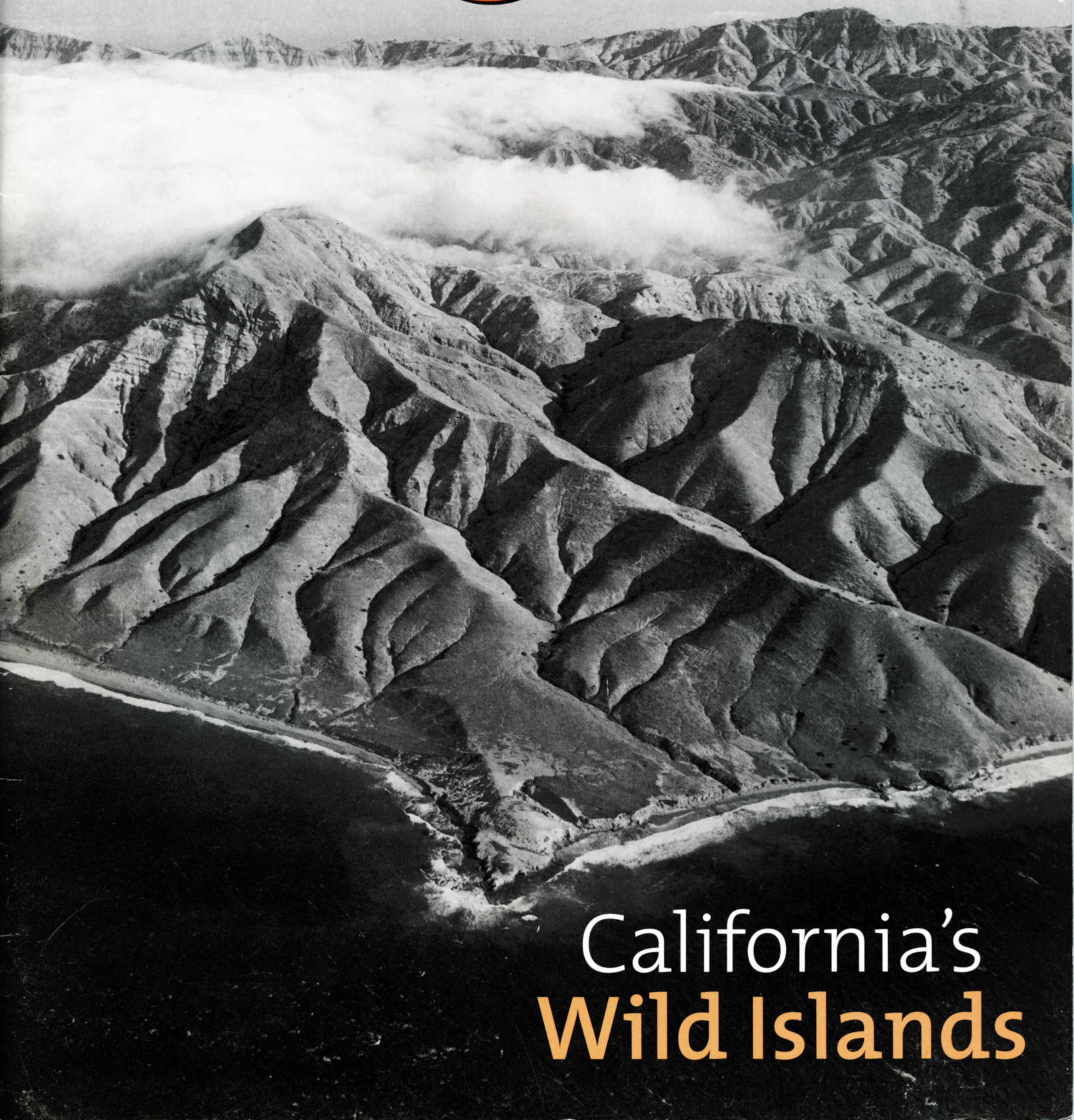


California's Wild Islands

A Baja California Island and the Feral Cat Threat

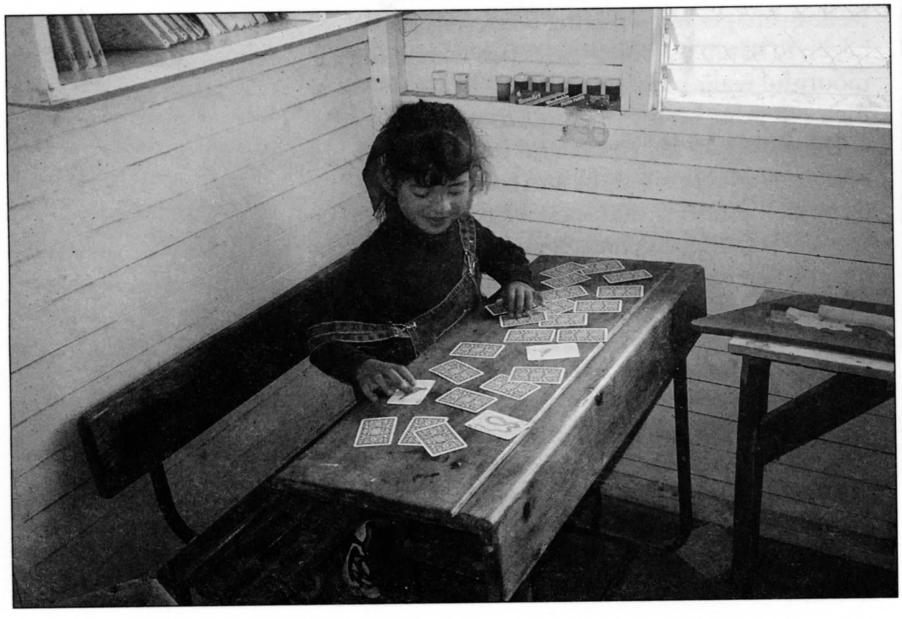
Using Research and Education to Save a Bird from Extinction

C. JOSH DONLAN AND BRADFORD S. KEITT

CALIFORNIA'S WILD ISLANDS

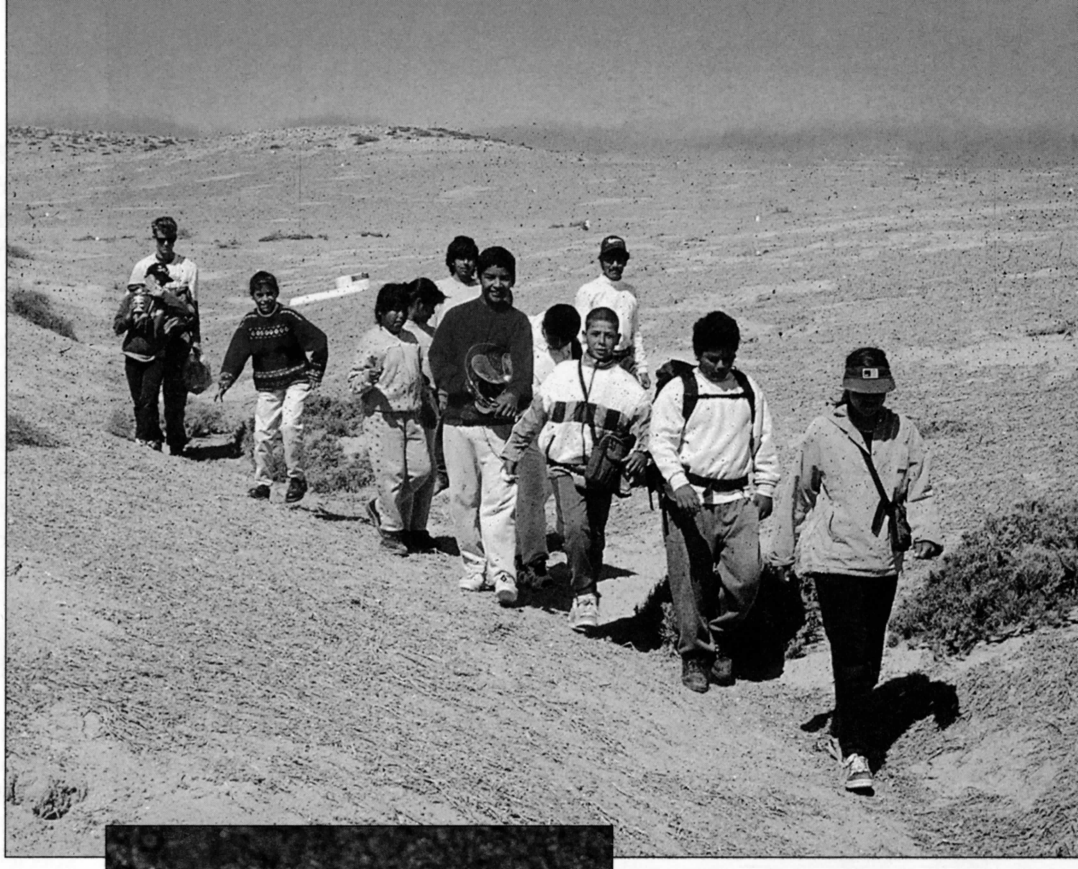
Photographs by Bradford S. Keitt

José's eyes lit up when he saw the young bird. He appeared surprised that something so small and delicate could live underground. The other children on the field trip gathered around to look at the black-vented shearwater chick as we pointed out characteristics we had discussed earlier in the classroom: webbed feet for swimming in the ocean, a sharp bill for catching fish, and large wings for flying in strong ocean breezes. The children were third-graders from the only school on Natividad Island, a windswept desert island 10 miles off the Vizcaíno Peninsula, about halfway down Baja California. This island is home to about 400 fishermen and their families, and the breeding ground for over 150,000 black-vented shearwaters, more than 95 percent of this species' entire population.



On the short stroll from the classroom to the bird colony, the children were able to see firsthand the burrows the birds construct to breed. They had also seen many dead birds around the seabird colony, killed by feral cats. The live chick we showed came from an artificial burrow with a removable lid being used in a study. The study, as well as this field trip, are part of a binational effort to save this and other declining island species from extinction. The children were learning about native creatures with which they share the island, and the threats these creatures face. For the black-vented shearwaters, the main threat is feral cats.

Natividad Island is 3.6 miles long and only 1.5 miles wide at its broadest point.



Top: School trip to the bird colony
Left: Black-vented shearwater
Opposite: Learning about local species by playing a game invented by the authors

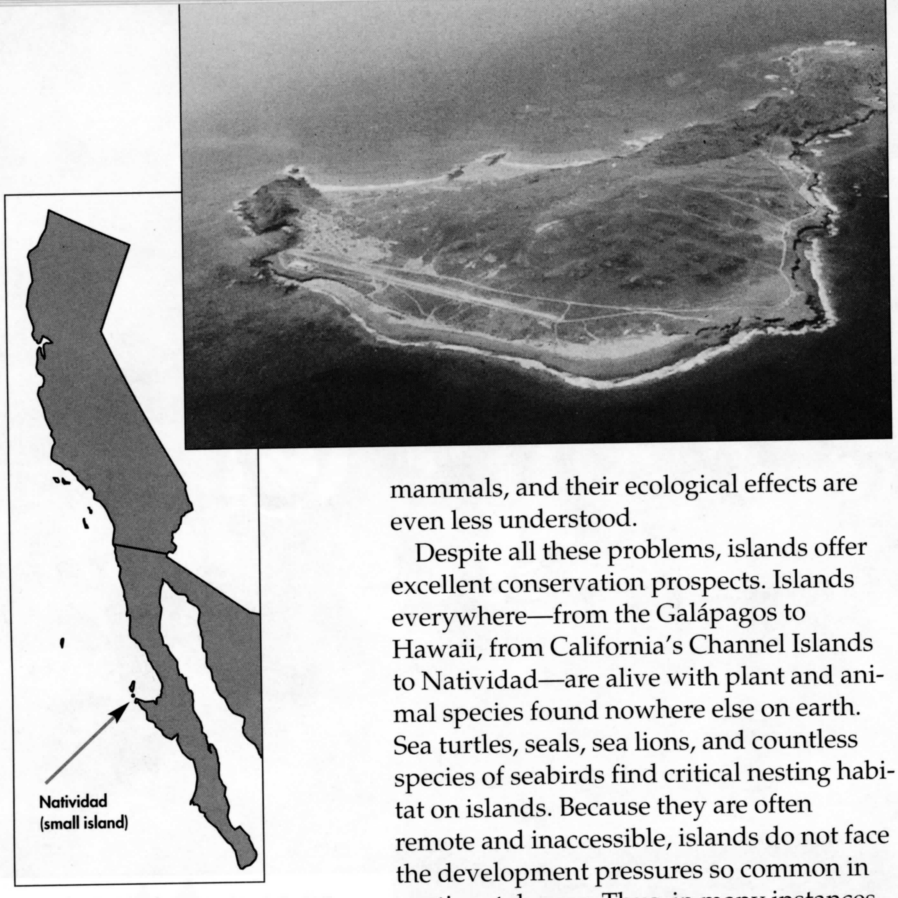
Significant rain falls only every three to five years, brought by hurricanes that drift up from the south or by storms from the north. Persistent winds sweep the island year round, driven by the desert heat on the adjacent peninsula. While the winds make the water around Natividad productive through the process of upwelling, the high wind-driven seas make fishing difficult. The islanders make their living diving for abalone, lobster, and turban snails, working in groups of three in *pangas,* small, blue-and-yellow boats made of fiberglass. Their catch is processed at the island fishing cooperative's canning plant and then sold to Japan. All the islanders are associated with the cooperative, which has exclusive fishing rights to the island, recognized by the federal government.

It is not uncommon for fishermen to bring domestic cats to Natividad Island as a way to control the native mice that are attracted to their houses. Unfortunately, when the cats prove to be poor mouse hunters, fishermen usually abandon them. When we arrived three years ago, a distinct population of wild cats roamed the island. Historical notes by other scientists and naturalists report feral cats here as far back as the early 1900s.

Feral cats are a leading cause of bird and mammal extinctions on islands all over the world. On Natividad Island we witnessed nightly killings over the past three years, and it was quite clear that cats were the single greatest threat to the survival and persistence of black-vented shearwaters. They were killing hundreds of birds a week as well as preying on other species native to the island.

Introduced mammals threaten many native species, especially those called "endemics": plants or animals native to and restricted to one particular geographical location. Over 75 percent of all recorded animal extinctions have been island endemics, the majority as a direct result of introduced species. Predators, such as feral cats and rats, prey on native fauna and extirpate nesting seabird colonies. Introduced herbivores, such as European rabbits, sheep, goats, and donkeys, can devastate island plant communities and threaten many endemic plants with extinction. Feral pigs are an island catastrophe, devouring bird eggs one hour and native plants the next.

Only habitat destruction is a greater threat to global biodiversity than introduced animals and plants. As we study these feral cats and how they threaten native island species, island endemics all over the world continue to flicker out of existence while common weeds flicker in. Even on such a remote, arid island as Natividad, annual non-native grasses, the crystalline iceplant from South Africa, and many European weeds are becoming major problems. These invasive aliens will be even harder to control than non-native



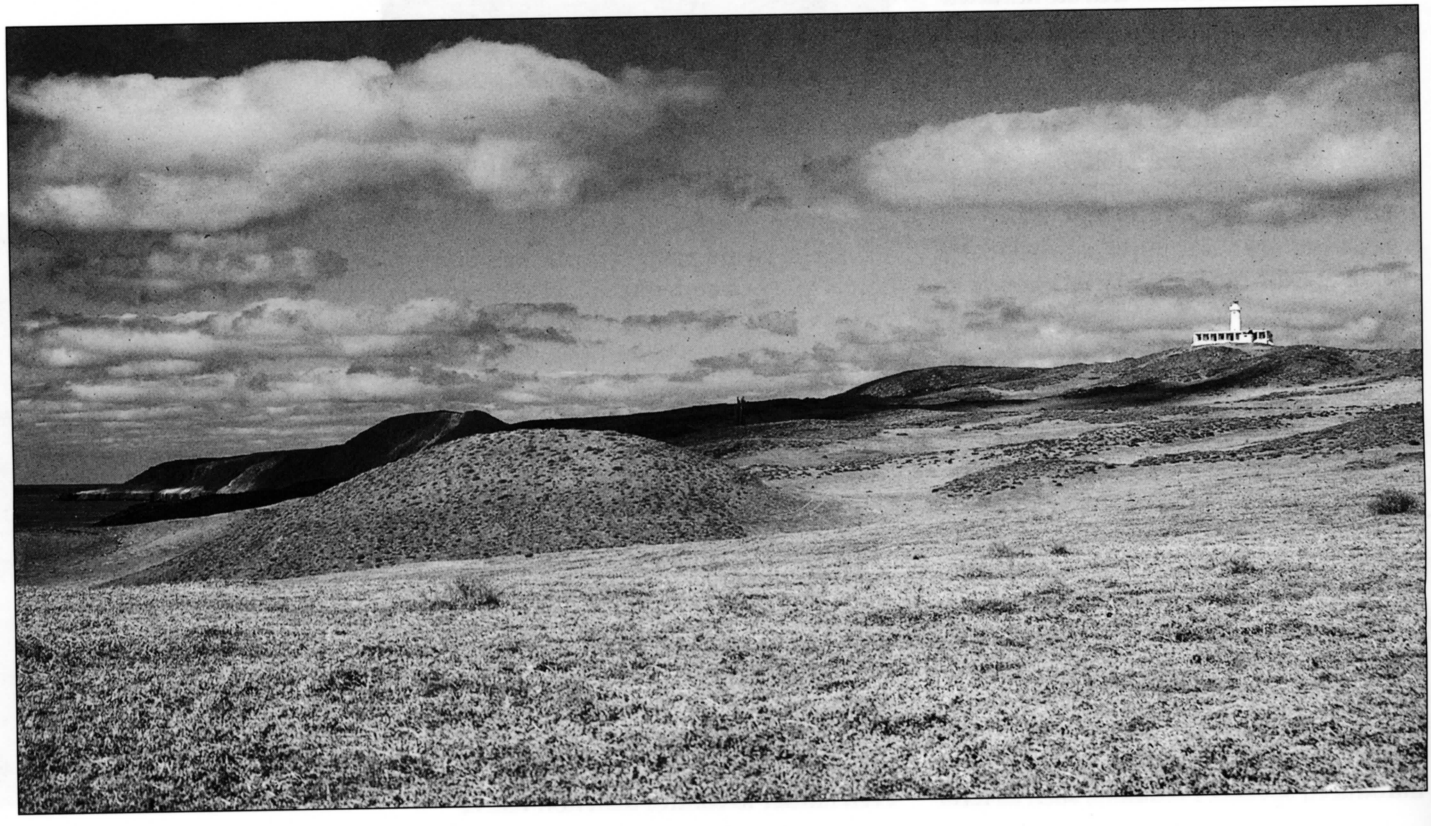
Top: Looking northward at Natividad, with air strip in foreground
Bottom: A solar-powered lighthouse guides fishermen.

mammals, and their ecological effects are even less understood.

Despite all these problems, islands offer excellent conservation prospects. Islands everywhere—from the Galápagos to Hawaii, from California's Channel Islands to Natividad—are alive with plant and animal species found nowhere else on earth. Sea turtles, seals, sea lions, and countless species of seabirds find critical nesting habitat on islands. Because they are often remote and inaccessible, islands do not face the development pressures so common in continental areas. Thus, in many instances, island conservation efforts can proceed without economic conflicts. And, last but not least, on islands we can preserve not only entire ecosystems but also the ecological and evolutionary processes that have been occurring on islands for tens of thousands to millions of years.

While the islands of northwest Mexico likely do not conjure up the same images as Darwin's Galápagos or the tropical paradises of the South Pacific, they are every bit as important to global biodiversity. The region's approximately 230 islands are home to more than 200 endemic animals and plants. An exploding human population in this region has brought increased development of fisheries; the presence of more humans means the presence of more introduced species—and the threat of more extinctions. Of 19 recorded animal extinctions on islands in northwest Mexico, 18 can be attributed to introduced mammals. Among them are three endemics driven to extinction by feral cats: the Guadalupe Island storm petrel, the Todos Santos Island packrat, and the Todos Santos rufous-crowned sparrow.

While we are too late for these 18 animals, many other endemic animal and plant species in this region might still be saved. Since 1994 we have been working to do just that. The regional conservation effort we are involved in includes conservation biologists, ecologists, and environmental educators from both Mexico and the United States. We have developed relationships with Mexican government agencies such as the National Institute of Ecology (INE) and



the Office of National Protected Areas of the Ministry of Fisheries, Natural Resources, and Environment (SEMARNAP). These relationships are prerequisite for effective and lasting conservation work. A collaboration of Mexican government agencies and a Mexican nonprofit conservation organization has resulted in the removal of introduced mammals from a number of islands on both sides of Baja California. In the past two years, this effort has focused on the Pacific islands of the peninsula. Feral goats and European rabbits were successfully removed from the San Benitos Islands, saving an endemic desert succulent from extinction. Feral cat populations have been removed from five Pacific Baja California islands, where many nesting seabird species have been decimated by years of cat predation. On Natividad Island we have succeeded in removing feral goats and sheep, which belonged to an island resident but were allowed to roam free because he could not afford fencing and feed. After this man learned about the damage caused by sheep and goats, he cooperated with our request that the animals be removed to his father's farm on the mainland.

A successful and permanent conservation program for these islands must include the community. Therefore, we work extensively with the members of local fishing cooperatives, which are usually at the heart of the island communities. On Natividad, everyone is connected to the cooperative in one way or another, since fishing is the island's only source of income. As educators and biologists, we were welcomed by the residents of Natividad, who provided housing as well as transportation to and from the island during our study. But our breakthrough came the year after the third-graders' field trip, when we returned to Natividad for our third and final year of research. Marcelo Castillo, president of the fishing cooperative and the highest official on the island, approached us to ask about the many dead birds he had seen. Castillo is in charge of vigilance, the goal of which is to keep people from poaching the resources around the island. When he heard that feral cats were devastating bird populations, Castillo asked us to help remove the cats. We were ecstatic at this request—it was a sure sign that our education efforts were working—and provided assistance and expertise for the removal effort. Led by a Mexican conservation organization, the effort had removed 95 percent of the cats from the island by July 1997. (The cats are hunted or trapped, then given away or, if a home can't be found, euthanized.) In the coming months we will work with the fishing cooperative to remove the rest.

While our scientific studies and restoration efforts contribute to the immediate preservation of biodiversity, we are counting on education for the long run. We hope that one day José's granddaughter will quiver with excitement as she looks at a nesting black-vented shearwater. And even more, we hope she will proudly guard this bird's habitat, and this island ecosystem, from the assault of non-native species. ■

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Peeking at a shearwater mother and chick through an infra-red camera lens